

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Phenol



◆ SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name **Phenol**
Chemical Name Phenol/ Hydroxybenzene

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Used in manufacture of plastics and resins like Nylon, Bakelite, paints, in surgical procedures; Used in manufacture of agrochemicals and pharma drugs
Uses identified against Not for uses other than those recommended
Dependent on relevant national regulations and directives

1.3 Details of the supplier of the safety data sheet:

Manufacturer Prasol Chemicals Limited
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Maharashtra, India.
Telephone +91-22-69450600/ 61952500
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1.4 Emergency telephone number

Telephone +91-22- 7045783555/ 7045790555
Language English

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)

Acute Toxicity (Oral)	Category 3	H301	Toxic if swallowed
Acute Toxicity (Dermal)	Category 3	H311	Toxic in contact with skin
Skin Corrosion	Category 1B	H314	Causes severe skin burns and eye damage
Acute Toxicity	Category 3	H331	Toxic if inhaled
Mutagenicity	Category 2	H341	Suspected of causing genetic defects
Specific Target Organ Toxicity	Category 2	H373	May cause damage to organs through prolonged or repeated exposure

Information concerning particular hazards for human and environment: No further information

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard

pictograms



GHS05



GHS06



GHS08

Signal word

Danger

Hazard statements

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
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H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure

Precautionary statements

General

P103 Read carefully and follow all instructions.

Prevention

P203 Obtain, read and follow all safety instructions before use.
P260 Do not breathe fume, mist, vapours or spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Use protective gloves, eye protection and face protection.

Response

P301+P316 IF SWALLOWED: Get emergency help immediately.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+P352 IF ON SKIN: Wash with plenty of water.
P302+P361+P354 IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with

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	P304+P340	water for several minutes.
	P305+P354+P338	IF INHALED: Remove person to fresh air and keep comfortable for breathing IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
	P318	IF exposed or concerned: Get medical advice.
	P319	Get medical help if you feel unwell.
	P321	Specific treatment: wash with plenty of water. (See section 4)
	P330	Rinse mouth.
	P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
	P363	Wash contaminated clothing before reuse.
Storage	P403+P233	Store in a well-ventilated place. Keep container tightly closed.
	P405	Store locked up.
Disposal	P501	Dispose of contents and container in accordance with national regulations

2.3 Other hazards

Not a PBT, vPVB substance according to the criteria of Annex XIII to REACH regulation

Not having endocrine disruptive properties as per criteria of Delegated Regulations (EC) 2017/2100 or (EC) 2018/605

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Name	Phenol
CAS Number	108-95-2
EC Number	203-632-7
Molecular Formula	C ₆ H ₆ O
Molecular Weight	94.11

Ingredient	Classification	Concentration (%)	SCL, M-factor, ATE
Phenol	Ac. Tox (oral) 3, Ac. Tox. (Der.) 3, Skin Corr. 1B, Ac. Tox. (inhl) 3, Muta. 2, STOT RE 2 H301, H311, H314, H331, H341, H373	100	Eye Irrit. 2; H319: 1 % ≤ C < 3 % Skin Corr. 1B; H314: C ≥ 3 % Skin Irrit. 2; H315: 1 % ≤ C < 3 %

3.2 Mixtures not applicable

None of the ingredients present are classified as skin sensitisers 1A, respiratory sensitisers 1A, aspiration hazards and endocrine disruptors.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information

After inhalation

Take off all contaminated clothing immediately.

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention

After skin contact

Wash off with plenty of water immediately, seek medical advice if necessary.

After eye contact

Rinse with plenty of water immediately and seek medical advice.

After swallowing

Do not induce vomiting and seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

After inhalation: Mucous membrane irritation, cough, shortage of breath, damage of respiratory tract

After contact with skin: Strong skin absorption as main danger of phenol poisoning at the workplace with paralysis of the central nervous system (with lethal consequences in severe cases) as well as liver and kidney damage.

After eye contact: burns

4.3 Indication of any immediate medical attention and special treatment needed

No specific antidote therapy for phenol poisoning is known. Therefore it is important to remove the phenol completely from the body surface and out of the body as quickly as possible, and in the case of inhalation prophylactic treatment to prevent pulmonary oedema is of great importance. Phenol causes strong caustic burns of the skin and mucous membranes due to its protein degenerating action. The skin initially discolours white, later red. After initial pain, local anaesthesia appears. Absorptive poisoning by large amounts of phenol is possible also through small affected skin regions and quickly leads to paralysis of the central nervous system as well as strong depression of the body temperature. Inhaling phenol vapours can lead to damage of the bronchial system and pulmonary oedema. Systemic damage to kidneys, liver and heart as well as neuropsychiatric disturbances are produced.

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Treatment:

Thoroughly clean the wetted skin areas, if possible with polyethylene glycol (e.g. polyethylene glycol 300). In case of eye contact, rinse copiously with water, in case of burns rinse continuously with water as far as possible and take to an eye specialist or eye clinic. In case of inhalation, to prevent pulmonary oedema, initiate inhalative cortisone therapy as early as possible (e.g. every 10 minutes 5 strokes of a cortisone containing aerosol dosing spray); administer codeine against dry coughing. In case of commencing or manifested pulmonary oedema, systemic administration of cortisone. Caution: A low symptom or symptom-free interval is possible. If swallowed, gastric lavage after intubation, activated charcoal, saline laxative.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media CO₂, dry powder, foam or water spray

Unsuitable extinguishing media water jet

5.2 Special hazards arising from the substance or mixture

May form toxic carbon oxides if burning. Combustible material
Closed container may rupture if strongly heated. Vapours are heavier than air and will spread at floor level. In case of warming, development of explosive gases/vapours. Explosive mixtures may occur at temperatures at or above the flashpoint.

5.3 Advice for firefighters

Cool closed containers exposed to fire with water spray.
Wear self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid breathing vapours, mist or gas.
Ensure adequate ventilation

6.2 Environmental precautions

Do not allow to enter sewers, surface or ground water.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
Suitable binder: sand

6.4 Reference to other sections

Section 8 for information on personal protection equipment.
Section 13 for disposal information

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

If possible, use material transfer, metering and blending plants that are closed.
Avoid contact with skin and eyes.
Avoid inhalation of vapour or mist.

7.2 Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion Follow normal measures for preventive fire protection.

Storage

Store at normal ambient temperature (-40°C to +45°C, depending on geographical conditions. Keep container tightly closed in a dry and well-ventilated place. Residual vapours might explode on ignition; do not apply heat, cut, drill and grind or weld on or near this container. Mechanical exhaust required.

Packaging material

Steel or refined steel

Incompatibility

Solvent, aluminium, aldehydes, halogens, hydrogen peroxide, oxidizing agents, strong acids, strong bases, formaldehyde, nitrites, nitrates, halogenates, peroxide compounds

Advice on common storage

Observe prohibition against storing together!

Storage stability

Stable under recommended storage conditions

7.3 Specific end use(s)

No further relevant information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit IOELV: STEL 16 mg/m³
IOELV: TWA 7.8 mg/m³, 2 ppm Skin

DNEL/DMEL (Workers)

Acute - local effects, inhalation 16 mg/m³

Long-term - systemic effects, dermal 1.23 mg/kg bodyweight/day

Long-term - systemic effects, inhalation 8 mg/m³

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Long-term - local effects, inhalation low hazard (no threshold derived)

DNEL/DMEL (General population)

Acute - local effects, inhalation No exposure expected

Long-term - systemic effects, oral 0.5 mg/kg bodyweight/day

Long-term - systemic effects, inhalation 0.452 mg/m³

Long-term - systemic effects, dermal 0.5 mg/kg bodyweight/day

Long-term - local effects, inhalation No data

PNEC (Water)

PNEC aqua (freshwater) 0.008 mg/l

PNEC aqua (marine water) 0.001 mg/l

PNEC (Sediment)

PNEC sediment (freshwater) 0.091 mg/kg dwt

PNEC sediment (marine water) 0.009 mg/kg dwt

PNEC (Soil)

PNEC soil 0.136 mg/kg dwt

PNEC (STP)

PNEC sewage treatment plant 2.1 mg/l

8.2 Exposure controls

Appropriate engineering controls If possible, use material transfer, metering and blending plants that are closed

Personal protective equipment

Eye/ face protection closed goggles, face shield

Skin protection

Hand protection Type of material Thickness Breakthrough time

Butyl-rubber 0.5 mm > 480 min

Polychloroprene (PCP) 0.5 mm 110 min

Body protection Boots, body suit

Respiratory protection Respiratory equipment with suitable filter or a self-contained respiratory apparatus.

Thermal hazards Combustible solid; Possibility of decomposition on excess heating

Industrial hygiene Do not inhale vapours / aerosols. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Use disposable clothing if appropriate. Smoking, eating and drinking should be prohibited in the application area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state solid

Colour Colourless

Odour sweetish

Odour threshold 0.048 ppm

pH 6.0

Melting point 40-42°C

Boiling point 181.8°C

Flash point 79°C (Closed cup)

Evaporation rate <0.01 (Butyl acetate=1)

Flammability (solid, gas) not flammable; combustible

Flammability limits **Lower** 1.7 Vol %; **Upper** 8.6 Vol %

Vapour pressure 0.48 hPa at 20°C

Vapour density 3.25 (air =1 at boiling point)

Relative density 1.07 at 20°C

Solubility in water 87.5 g/l at 25°C, pH 5.0

Partition coefficient 1.47 log Kow (n-octanol/water) at 30°C

Ignition temperature 595°C

Decomposition temperature no data available

Viscosity 3.437mPa s (dynamic) at 50°C

Particle characteristics Not a nanomaterial/ nanoform

9.2 Other information

pKa at 20°C 9.9

Explosive properties no explosive properties

Oxidizing properties no oxidizing properties

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Surface tension	38.2mN/m at 50°C
Heat of combustion	-3058kJ/mol
Heat of vaporization	58.8 kJ/mol

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	No hazardous reaction when handled and stored according to provisions.
10.2 Chemical stability	Under storage at normal ambient temperatures (-40°C to +40°C), the product is stable.
10.3 Possibility of hazardous reactions	Exothermic reaction with aldehyde, halogens, hydrogen peroxide, oxidising agent, strong acids and bases, formaldehyde; risk of explosion with nitrites, nitrates, peroxy compound.
10.4 Conditions to avoid	Heat, ignition sources (flames, sparks), light, incompatible materials
10.5 Incompatible materials	Oxidizing agents, aldehydes, isocyanates, nitrites, nitrides, Friedel-Crafts catalysts. Avoid ignitable vapour-air-mixtures. Unsuitable materials: metals, Rubber, various plastics, alloys
10.6 Hazardous decomposition products	Thermal decomposition products- carbon oxides

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute toxicity	
LD50 oral rat	340-540mg/kg bw Cat 3, H301
LC0 inhalation rat	900 mg/l (8h) Cat 3, H331
LD50 Dermal rabbit	660 mg/kg bw Cat 3, H311
LD50 subcutaneous rabbit	620mg/kg bw toxic
Skin irritation	corrosive, causes skin burns Cat 1B, H314
Serious eye irritation	corrosive, causes eye burns
Respiratory or skin sensitization	No sensitizing effects known
Germ cell mutagenicity	in vitro tests showed mutagenic effects Muta. Cat. 3, H341
Carcinogenicity	not carcinogenic
Reproductive toxicity	no data available
STOT-single exposure	corrosive to eyes, skin
STOT-repeated exposure	Cat 3, H373 , kidney, liver
Oral	NOAEL 5000 ppm or 450 mg/kg bw/day (oral) reduced water consumption
Inhalation	NOAEC 100mg/m3
Dermal	NOAEL 130 mg/kg bw/day.
Aspiration hazard	no data available
11.2 Information on other hazards	
Endocrine disrupting properties	No endocrine disrupting properties
Other information	No further information

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	
Aquatic toxicity	
Toxicity to fish	LC50 14d 21.93mg/L <i>Poecilia reticulata</i>
Toxicity to aquatic invertebrates	EC50 48h 3.1 mg/L <i>Ceriodaphnia dubia</i>
Toxicity to aquatic algae and cyanobacteria	EC50 96h 61.1 mg/L <i>Pseudokirchneriella subcapitata</i>
Toxicity to microorganisms	IC50 24h 100mg Nitrosomonas sp.
Toxicity to other aquatic organisms	LC50 4d 0.04mg/L <i>Rana pipiens</i> (frog)
Long term toxicity to fish	NOEC 60d 0.077mg/L <i>Cirrhina mrigala</i>
Long-term toxicity to aquatic invertebrates	EC50 16d 10mg/L <i>Daphnia magna</i>
12.2 Persistence and degradability	
Biodegradation	readily biodegradable (62% in 4d; 85% in 14d)
12.3 Bioaccumulative potential	Bioconcentration factor 17.5; Half-life 0.83h <i>Danio rerio</i> (zebra fish)
	very low potential for bioaccumulation
12.4 Mobility in soil	Koc = 82.8; very low potential for geoaccumulation
12.5 Results of PBT and vPvB assessment	Not a PBT, vPvB substance according to the REACH regulation
12.6 Endocrine disrupting properties	No endocrine disrupting properties
12.7 Other adverse effects	No further information

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Observe all national, state and local environmental regulations.
Product disposal	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Packaging disposal	Clean container with water. Recover waste water for processing later. Destroy packaging by incineration at an approved waste disposal site.
Sewage disposal	Do not dispose in sewage.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	ICAO/IATA
14.1 UN Number	1671	1671	1671
14.2 UN proper shipping name	PHENOL, SOLID (Phenol at temp. < melting point (<40.9 °C))		
14.3 Transport hazard class	6.1	6.1	6.1
14.4 Packaging group	II	II	II
14.5 Environmental hazards	not a marine pollutant		
14.6 Special precautions for the user	Combustible solid; Flash point 79°C (closed cup)		
Danger group (Kemmler)	60		
EmS Number	F-A, S-A		
Tunnel restriction code	D/E		
14.7 Maritime transport in bulk according to IMO instruments	Ship type: 2; Pollution Category: Y		

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
Major accident hazard	Seveso III H2 (Acute toxic)
International Chemical Inventory Status	
USA (TSCA)	Listed (Tracking No. 25510)
Canada (DSL)	listed
Australia (AICS)	listed
Japan (MITI)	listed
Korea (KECL)	Listed (KE No. 28209)
Philippines (PICCS)	listed
China	listed
New Zealand	listed
Taiwan	listed
15.2 Chemical safety assessment	A Chemical Safety Assessment will be carried out at the time of REACH registration

◆ SECTION 16: OTHER INFORMATION

Indication of changes: Sections in which changes have been made since the last version are marked with a diamond ◆ in the left hand margin.

Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CLP	Classification for Labeling and Packaging
DMEL	Derived minimal effect level
DNEL	Derived No-Effect Level
DSL	Domestic Substances List
EC	European Commission
EC50	Half maximal effective concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency Schedule
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
IATA	International Air Transport Association
IBC	International Bulk Chemical
ICAO	International Civil Aviation Organization
IMDG	International Maritime Code for Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Values

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KECL	Korea Existing Chemicals List
KOC	Soil adsorption coefficient
KOW	Partition Coefficient octanol-water
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
MARPOL	International Convention for the Prevention of Pollution from Ships
M-factor	Multiplication Factor
MITI	Ministry of International Trade and Industry
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
PBT	Persistent, bioaccumulative and toxic substances
PICCS	Philippine Inventory of Chemicals and Chemical Substances
PNEC	Predicted No-Effect Concentration
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
SCL	Specific concentration limit
STEL	Short-term exposure limits
STOT	Specific target organ toxicity
TSCA	Toxic Substances Control Act
TWA	Time-weighted average
UN	United Nations
vPVB	(very) Persistent, (very) Bioaccumulative

Key literature references and sources for data

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

ECHA <https://echa.europa.eu/registration-dossier/-/registered-dossier/15508>

CDC <https://www.cdc.gov/niosh/npg/npgd0493.html>

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End of safety data sheet